UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,072	03/25/2004	Karl Pichler	NSL-030	3530

27652 7590 01/25/2006

JOSHUA D. ISENBERG
204 CASTRO LANE
FREMONT, CA 94539

EXAMINER	
THAI, LUAN C	

ART UNIT	PAPER NUMBER
2891	

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/810,072	PICHLER, KARL	
	Examiner	Art Unit	
	Luan Thai	2891	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15 and 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☒ Claim(s) *18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is responsive to the amendment filed 11/04/05.

Claims 1-15 and newly added claim 18 are pending in this application.

Claims 16-17 have been canceled.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim **13** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim **13**, the recitation "*covering the active layer and the insulating material with an* ***unpatterned top electrode layer before cutting the layered structure*** ..." is unclear and confused since claim 10 recites "***before cutting through one or more of the layers of the layered structure ..., patterning the top electrode layer***" and claim 12 recites "***after patterning the top electrode layer ..., disposing an insulating material between the active layer portions*** *of two or more adjacent device sections*", wherein claim 13 depends on claim 12, which depends on claim 11, which depends on claim 10.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5, 7-12, and 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Hanak (4,754,544) and Vogeli et al. (5,131,954) separately.

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

Regarding claims 1-5, 7-12 and 14-15, Hanak (see specifically figures 1A-1G and 9A-9E) disclose a method for manufacturing photovoltaic devices comprising the steps of: forming a layered photovoltaic device structure having a plurality of layers including a bottom electrode layer (1), a top electrode layer (5), and one or more active layers (3) between the top and bottom electrode layers; cutting through one or more of the layers of the layered structure to divide the layered structure into one or more separate device sections (Fig 1C), each section having a portion of the active layer disposed between portions of the top and bottom electrode layers, wherein at least one of the layers is an unpatterned layer at the time of cutting; providing at least one form of protection (e.g., insulating layer 11) that prevents shorts which could arise from the cutting steps; assembling two or more device sections into a module and electrically connecting the bottom electrode layer portion of one device section to the top electrode layer portion of another device section (see Figs. 1D-1G and 9D-9E). Hanak further discloses cutting through one or more of the layers of the layered structure including cutting through a substrate layer (1) of the layered structure (see Figs. 1F); and cutting through one or more of the layers of the layered structure including cutting through all of the layers of the layered structure (see Fig. 1F-

1G and 9B-9C), wherein all of the layers of the layered structure are unpatterned layers at the time of cutting (see Figs. 1A-1G and 9A-9E). Hanak also discloses protecting an edge or a side of a device section against undesired electrical contact between two or more of the bottom electrode portions (by insulating or passivating layer 15), top electrode portions and active layer portions (by the insulating or passivating layer 11 in Figs. 1E-1G and the insulating passivating layer 185 in Figs. 9D-9E), wherein assembling two or more device sections into a module includes the step of laminating the two or more device sections side-by-side (Figs. 4F-4H and 9D-9E) between layers of laminating material (layer 87 or layer 187). Hanak further discloses before cutting through one or more of the layers of the layered structure to divide the layered structure into one or more device section, patterning the top electrode layer and/or active layers to define the one or more device module sections (see Figs. 1-8).

Vogeli et al. also teaches a method for manufacturing photovoltaic devices (see specifically Figs. 3-10, Col. 6, line 9 to Col. 10, line 38) identical to Hanak's method; therefore, claims 1-5, 7-12, and 14-15 are also rejected under 35 U.S.C. 102(b) as being anticipated by Vogeli et al. for the similar reasons detailed above.

5. Claims 1-9 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Charache et al. (6,057,506).

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

Regarding claims 1-9 and 15, Charache et al. (see specifically figures 5 and 7) disclose a method for manufacturing photovoltaic devices comprising the steps of: forming a layered

photovoltaic device structure having a plurality of layers including a bottom electrode layer (10), a top electrode layer (20), and one or more active layers (12) between the top and bottom electrode layers; cutting through one or more of the layers of the layered structure to divide the layered structure into one or more separate device sections (Figs. 8A-8C), each section having a portion of the active layer disposed between portions of the top and bottom electrode layers, wherein at least one of the layers is an unpatterned layer at the time of cutting; providing at least one form of protection (e.g., insulating layer 14) that prevents shorts which could arise from the cutting steps; assembling two or more device sections into a module and electrically connecting the bottom electrode layer portion of one device section to the top electrode layer portion of another device section (see Figs. 5 and 7). Charache et al. further discloses cutting through one or more of the layers of the layered structure including cutting through a substrate layer (10) of the layered structure; and cutting through one or more of the layers of the layered structure including cutting through all of the three layers (10-12-20) of the layered structure (see Figs. 5 and 7), wherein all of the layers of the layered structure are unpatterned layers at the time of cutting. Charache et al. also discloses protecting an edge or a side of a device section against undesired electrical contact between two or more of the bottom electrode portions and active layer portions by insulating or passivating layer 14, wherein assembling two or more device sections into a module includes the step of laminating the two or more device sections side-by-side between layers of laminating material (e.g., layer 14), and wherein protecting an edge of a device section includes the step of, before cutting through layer (20) (in Figs. 5 and 7), placing short-proofing material (14) between adjacent layers (12 and 20) of the layered structure proximate a location where the layer (20) is to be cut. Charache et al. further discloses the step

of: exposing a portion of an upper surface of the bottom electrode layer portion of a first device section (see Fig. 8E), and connecting an electrically conductive material between the top electrode layer portion of a second device section and the exposed portion of the upper surface of the bottom electrode layer (see Figs. 5 and 7).

6. The following reference(s) is/are cited as of interest to this application:

U.S. Pat. No. 5,639,314 to Kura et al. is cited for showing a method of fabricating three-dimensionally shaped photovoltaic devices.

Allowable Subject Matter

7. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

The prior art taken either singly or in combination fails to anticipate or fairly suggest, among others, at least the method steps of: *before cutting through the layered structure, placing strips of electrically insulating, short-proofing material between the top electrode layer and the one or more active layers at the locations where the layered structure is to be cut, whereby the strips of short-proofing material protect against undesired contact as the layered structure is cut*, as recited in claim 18; especially when these limitations are considered within the specific combination claimed.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan Thai whose telephone number is 571-272-1935. The examiner can normally be reached on 6:30 AM - 5:00 PM, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bradley W. Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/

Luan Thai
Primary Examiner
Art Unit 2891
January 20, 2006